Unhealthy Diet as a Risk Factor for Non-Communicable Diseases: A Study on Males over 40 Years of Age in the Colombo District, Sri Lanka

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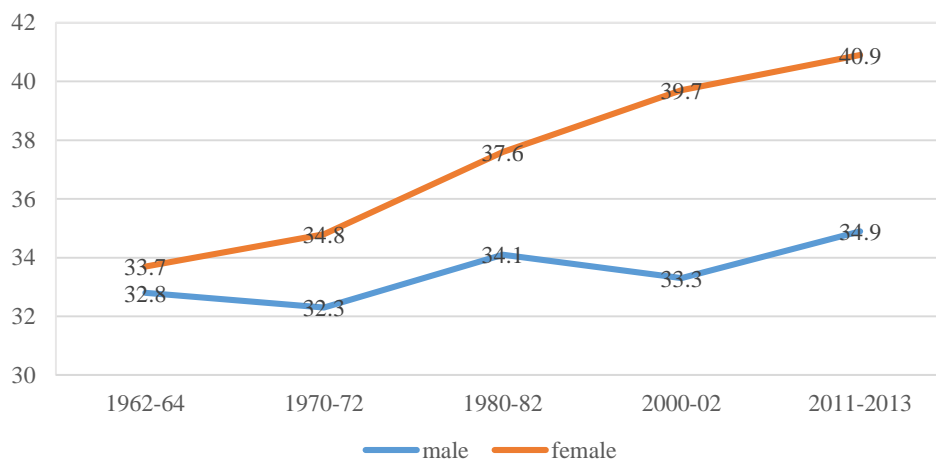hansajaya@yahoo.com

Abstract

Non-communicable diseases (NCDs) can be observed as a leading cause of mortality in Sri Lanka. Unhealthy diet, smoking, physical inactivity and the harmful use of alcohol increase the risk of dying from an NCD. Unhealthy diet can be recognized as one of the main behavioural risk factors that cause NCDs. The main objective of this study is to investigate the impact of 'unhealthy diet' as a risk factor for NCDs. In this study, both primary and secondary data sources have been utilized. In the process of data collection, a questionnaire was administrated and additionally, in-depth interviews were conducted with key informants. Target population were men over 40 years of age who suffer from any kind of NCD in the Colombo district. This study tries to identify the impact of 'unhealthy diet' on the morbidity of the men and the extent to which they have controlled after being diagnosed with a NCD. Eventhough there is attention paid on the before and after situation of diagnosing with a NCD, there were no significant changes visible but only slight changes in the consumption patterns of fruits, vegetables and green leaves. On the contrary, there were significant changes in the consumption patterns of salt, sugar and fat. Consumption of salt, sugar and fat has been reduced after being diagnosed with a NCD. Compared to vegetables and green leaves, the consumption of fruits has been reduced mainly due to quality concerns of fruits nowadays. In conclusion it can be said that to minimize the mortality through NCDs; unhealthy diet has to be controlled.

Keywords: Behavioural risk factors, non-communicable diseases (NCDs), unhealthy diet

Introduction

Mortality in Sri Lanka has declined substantially over the latter half of the twentieth century and then into the millennium. The decline of mortality has occurred at all ages and for both sexes, where the rapidity of improvement has been greater for females (Dissanayake, 1987). Life expectancy has resulted in a substantial male – female gap in Sri Lanka. Male-female gap at birth is identified as almost 6 years (Department of Census and Statistics, 2015). The visible gender gap in life expectancy from the age of 40 years is further elaborated through the figure given below.

Figure1: Life expectancy at age 40 by sex, 1963-2012

Source: Department of Census and Statistics, Sri Lanka, 2016

As indicated by figure1, it is noticeable that over the years, the gap between life expectancy of males and females at the age of 40 years has increased.

Sri Lanka has come a long way from its focus to control communicable diseases, improving maternal and child health, and virtually eliminating vaccine preventable diseases. Currently, chronic non-communicable diseases (NCDs) have become a dominant health problem, surpassing communicable diseases and have become the leading cause of mortality, morbidity, and disability in Sri Lanka especially for males. Some of the leading causes of hospital deaths due to NCDs is shown in table 1 below.

Table 1: Leading causes of hospital deaths, 2014

Causes of death	Number of deaths	Percentage of leading causes of hospital deaths
Ischemic heart diseases	6,346	24.3
Neoplasms	4,995	19.1
Pulmonary heart diseases and diseases of the pulmonary circulation	3,685	14
Cerebrovascular disease	3,578	13.8
Diseases of the respiratory system	3,415	13
Pneumonia	2,802	10.8
Diabetes mellitus	671	2.6
Hypertensive disease	649	2.4

Source: Ministry of Health, 2016

A clear picture on the mortality that occurs due to NCDs in Sri Lanka by year 2014 is indicated in table 1. According to the annual hospital statistics published by the Ministry of Health, more than 80 per cent of the hospital deaths are due to NCDs. Most importantly more than 24.3 per cent of these deaths (6,346) are due to heart diseases. In addition to the NCDs mentioned above, one fourth of the deaths have occurred due to other non-communicable diseases (Ministry of Health, 2016).

Rationale

The study identifies the disparity in the life expectancy of males and females and the contribution of non-communicable diseases in light of this difference. It has been identified that males are more vulnerable to suffer from NCDs more than their counterparts. This vulnerability occurs in the mid-life period. This leads middle and old aged men to have a shorter life expectancy and higher mortality in comparison to women (WHO, 2015). Unhealthy diets, smoking, physical inactivity, the harmful use of alcohol and stress have been identified as the main risk factors for NCDs (World Health Organization, 2015). Among these risk factors, unhealthy diet can be identified as one of the main behavioural risk factors that cause NCDs. This study addresses the impact of unhealthy diet which enacts as a risk factor that contributes to the higher prevalence of non-communicable diseases among males which ultimately creates a gender disparity between the life expectancy at birth of males and females.

Although there are general discussions about the gender gap in life expectancies, a serious attempt has not been taken so far to provide a rational explanation for such a significant difference. Hence the main objective of this study is to investigate the impact of unhealthy diet as a risk factor for men with NCDs who are 40 years of age and over.

Literature Review

Sri Lanka remains in a higher position with regard to demographic indexes compared to the other South Asian countries in the region. More than 80 per cent of the deaths reported in Sri Lanka have occurred due to NCDs. Mortality due to NCDs and morbidity could have a significant impact on the social, economic and the health standards of a country. According to the annual hospital data collected by the Ministry of Health, it indicates a rapid growth and a distribution of NCDs within the country (Ministry of Health, 2016). The major causes of death for males in Sri Lanka are diseases of the circulatory system, diseases of respiratory system, endocrine, nutritional and metabolic diseases, neoplasm and external causes of morbidity and mortality and men are increasingly vulnerable to these causes during the adult ages. Among the diseases of the circulatory system, ischemic heart diseases, other heart diseases, hypertensive diseases and cerebrovascular diseases are the greatest killers of men in the ages of 40 and over in Sri Lanka (Disanayake, 2014).
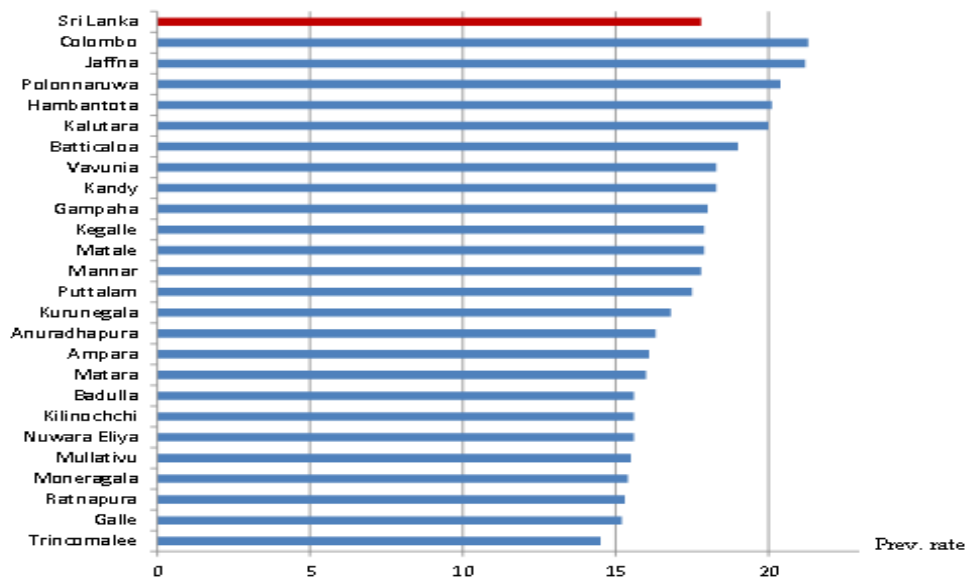
Smoking, physical inactivity, the harmful use of alcohol and unhealthy diets increase the risk of dying from a NCD (World health organization, 2015). It is important to identify whether the population of the country is well aware of the increasing number of NCDs. The population of the country should be concerned of their physical activeness and correct dietary patterns. According to a research which was conducted in Ghana, it was discovered that the society's awareness on the importance of physical activeness and dietary patterns are at a low level in general. Moreover, it was identified that awareness of males is at a very low level compared to their female counterparts (Suzuki et al, 2009). There has also been a major nutritional shift in the traditional Asian and Western Pacific diets with rapid urbanization due to economic prosperity. At the same time, consumption of traditional Asian foods, such as pickles, smoked dried meat and dried fish have been implicated with stomach cancer which is quite high in several countries in the region (Yew et al., 2015). The annual hospital data collected by the Ministry of healthindicates a rapid growth and a distribution of NCDs within the country (Ministry of health, 2016). In these

circumstances, it is vital to conduct a study that pays special attention to dietary patterns of middle-aged men with NCDs.

Methodology

In the process of data collection, Colombo district has been selected as the location of the study as the highest number of deaths caused by non-communicable diseases has been reported from this district according to the Self-reported Health Survey (Department of Census and Statistics, 2015). It is more justifiable as most of the hospitals are located in the Colombo district and it denotes a higher prevalence rate of NCDs.

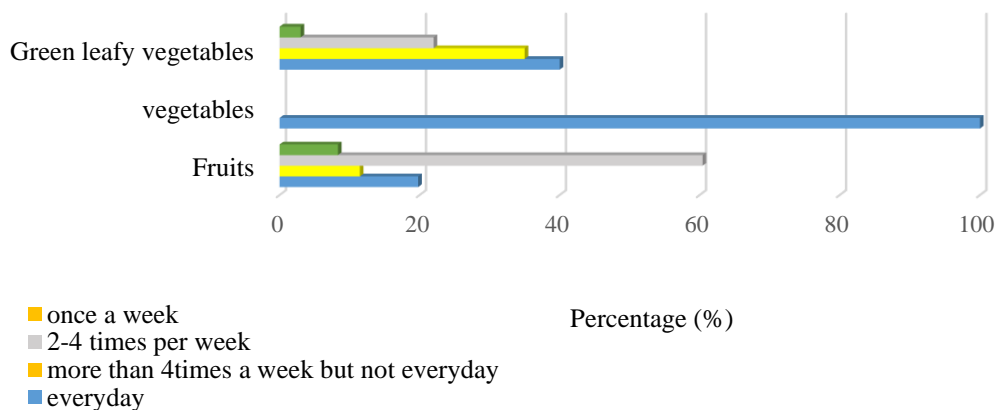**Figure 2: Prevalence of any NCD by district, 2012**

Source: Ministry of Health, 2016

Considering the objective of the study 128 male respondents were sought from patients visiting 2 medical institutions: a public hospital and a private hospital. Sample was selected from those who came for checkups at the above-mentioned medical institutions using the purposive sampling method. In conferring to the above criteria, a questionnaire was completed with their consent as and when time permitted before or after their checkups. Key Informants were selected using the purposive sampling method to obtain more knowledge on the patients' lifestyles and health seeking behaviour. These key informants included medical officers and specialists in the field of medicine.
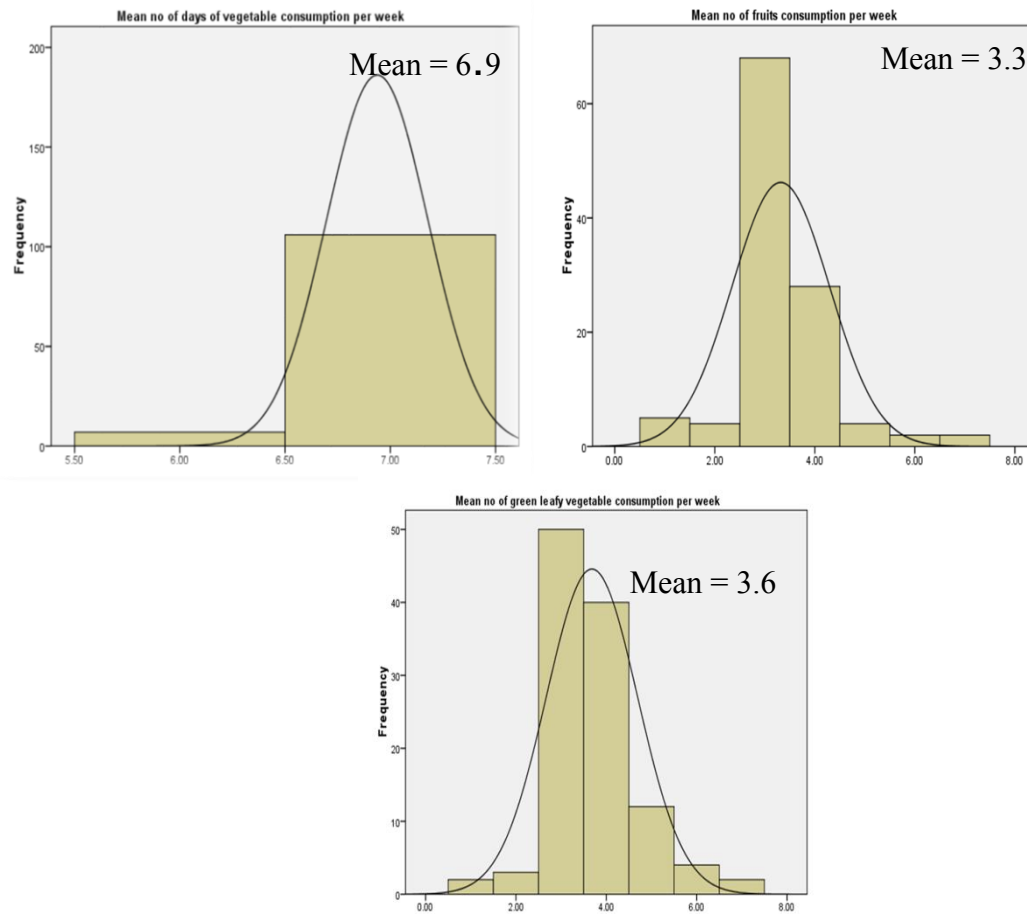
Analysis

NCDs can be observed as a leading cause of mortality in Sri Lanka. This affects mostly men over 40 years of age. Among behavioural risk factors, 'unhealthy diet' can be identified as one of the main behavioural risk factor that cause NCD and its contribution to NCD has been proved through many researches. Doctors also agree that there is a direct impact on NCDs from an 'unhealthy diet'. Standard measurements mentioned in appendix 1 are used in evaluating the dietary pattern which comes with their lifestyle. These standard measurements have also been used in the STEPS survey conducted by the WHO with regard to health in Sri Lanka. Under the dietary patterns much attention has been directed towards topics such as the use of vegetables, fruits and green leaves. The study has focused on the before and after conditions of dietary patterns and its influence on NCDs.

Figure 3: Percentage distribution on the consumption of food per week
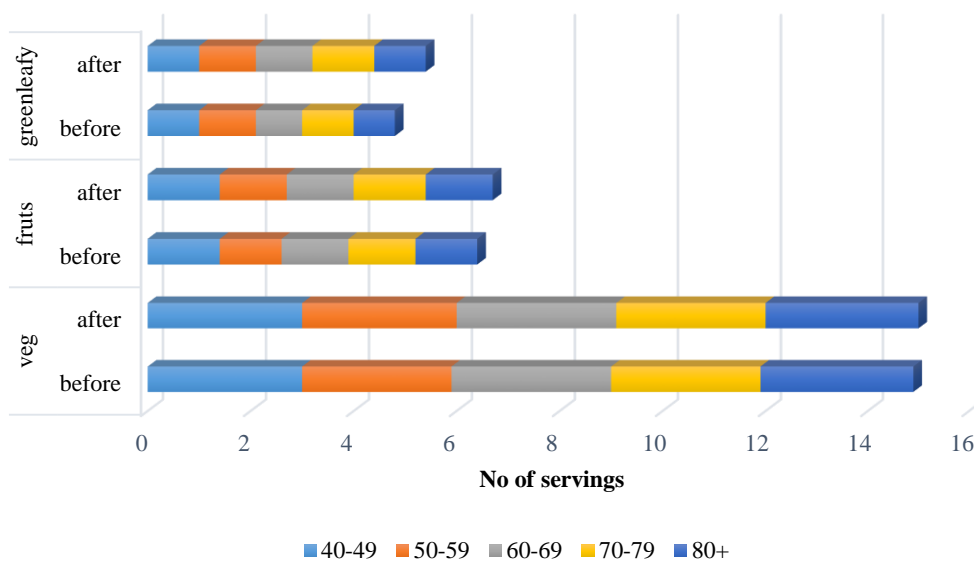

Source: Field survey, 2016

Figure 3 indicates the frequency of consuming food per week and according to this figure all the respondents have answered that they consume vegetables all seven days of the week and majority of 60 per cent consumes fruits only 2 to 4 days per week. Nearly 40 per cent consume green leaves every day and about 35 per cent consume green leaves for more than 4 days per week. This proves that among these respondents the consumption level of vegetables and green leaves is at a satisfactory stage. But quite contrary the consumption level of fruits is at a very unsatisfactory level. Moreover, it had been discovered that the expensiveness and injection of chemical substances are the main reasons for the low consumption of fruits.

Figure 4: Mean number of days selected foods being consumed per week
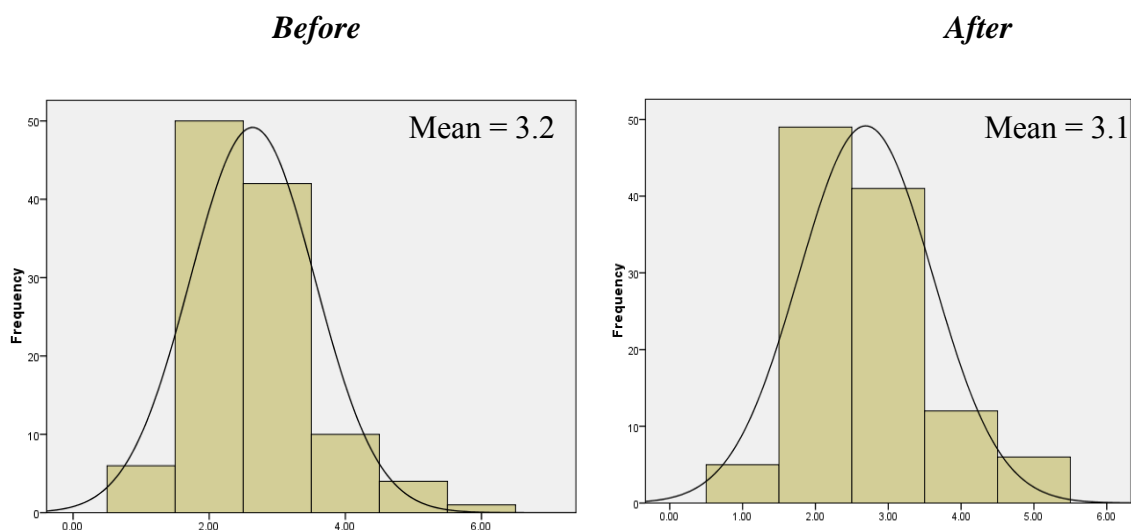

Source: Field survey, 2016

In order to understand it more, the mean number of days per week when vegetables, fruits and green leafy vegetables are consumed is calculated and presented through figure 4. As it proved above, vegetables which are being consumed on all seven days of the week has a value of 6.9, green leafy vegetables which are being consumed for nearly four days a week has a value of 3.6 and fruits which are being consumed for about three days has a value of 3.3. These values have also been attested by the risk factor survey conducted in 2012 that the consumption of fruits is at a very low level (Ministry of Health, 2015).

Earlier the consumption of food per week has been discussed and in this section the focus will be on the number of serving taken by an individual. According to figure 5 given below, it can be identified that on average, a respondent would have 15 servings of vegetables, 7 servings of fruits and 5 servings of green leaves per day.

Figure 5: Number of servings of selected foods on an average day

Source: Field survey, 2016

It is also important to consider the trends of food consumption before and after the respondents are diagnosed with a form of NCD. Figure 5 presents that after being diagnosed there had not been significant changes in the pattern of consumption, but minor changes of increased consumption in vegetables and green leafy vegetables. Even though the consumption patterns of different age groups are considered, there are no visible changes in the patterns of consumption.
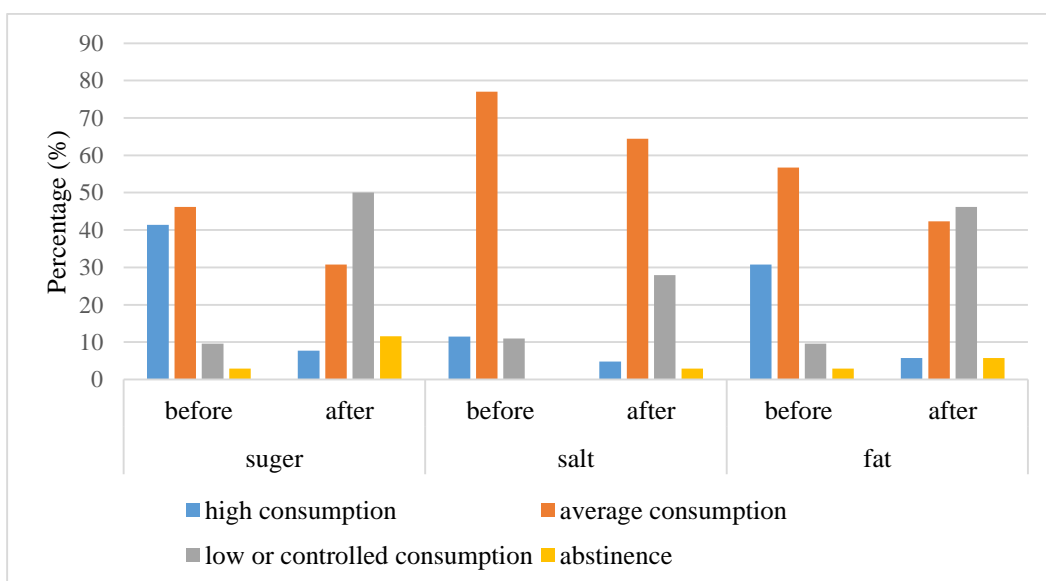
Figure 6: Mean no of meals consumed from an outside place per week

Before   *After*

Source: Field survey, 2016

It has been verified through a number of researches that the food brought from outside of the home can be unhealthy compared to the food prepared at home. As there is a direct impact of consumption of food on NCDs, it is important to pay attention on the mean number of meals taken outside of the house per week. There was no considerable change in the phenomenon when before and after situations are considered. Before the respondents were diagnosed the mean was reported as 3.2 and after being diagnosed it could be identified as 3.1. According to the interviews conducted with the doctors, it has been discovered that even though doctors acknowledge the individuals on the importance of consuming good food, majority of them have got used to the habit of consuming pre-cooked meals or meals prepared outside the home (Figure 6).

This study also focuses on the food such as sugar, salt and fat which are considered as food with risks in consuming when the non-communicable diseases are considered. Sugar can be identified as one of the main reasons for diabetes and there is a significant change in the consumption pattern of sugar when considering before and after situations. There were 40 per cent of respondents with high consumption of sugar and 45 per cent on average consumption. After being diagnosed, percentage of high consumption has been decreased to less than 10 per cent and 50 per cent has reached the level of controlled consumption and this is also clearly indicated in figure 7 below.

Figure 7: Percentage distribution on the consumption of sugar, salt and fat

Source: Field survey, 2016

The figure above further explains that deliberate abstinence of consuming sugar had a percentage of 2 before being diagnosed and it has increased up to 10 per cent after being diagnosed. So, it indicated that the consumption of sugar has been controlled by the factor of being recognized of an NCD.

When considered the consumption patterns of salt, the majority are on an average consumption. When the before and after situations of consuming salt are considered, it could be identified that the percentage of average consumption has been reduced and the percentage on low and controlled consumption has increased. It is evident that those who are in the category of average consumption of salt have tried to control their consumption of salt after being diagnosed. There are 30 per cent of respondents who belong to the category of high consumption of food with fat, 56 per cent on the category of average consumption and 10 per cent belonging to the category of low or controlled consumption. The above figure shows that the percentage of high consumption has rapidly decreased, and the percentage of controlled consumption has increased after being diagnosed. It can also be identified that the percentage of abstinence has also increased after being diagnosed. When considering the study sample, it indicates that after the diagnosis of the NCD there is a significant decrease in the consumption of sugar, salt and fat.

Conclusion

Many of the existing literature have been proved by the study as the study also discovers one of the risk factors for NCDs as 'unhealthy diet'. Ghaffar et al. in 2004 has also stated that behavioural risk factors include 'unhealthy diet' especially for men. Even though there is attention paid on the before and after situation of diagnosing an NCD, there were no significant changes visible but only slight changes in the consumption patterns of the fruits, vegetables and green leaves. On the contrary, there were significant changes in the consumption patterns of salt, sugar and fat. Consumption of salt, sugar and fat has reduced after being diagnosed with an NCD. Compared to vegetables and green leaves, the consumption of fruits has reduced mainly due to the issues on the quality of fruits nowadays. It is necessary that once an individual is identified with an NCD, they should be made aware that controlling a suitable dietary pattern is also important just as well as the intake of medicaments. Government should also pay more attention on providing organic food for the market while understanding the impact of NCD levels in the national health status. In

conclusion it can be said that to minimize the mortality through NCDs; 'unhealthy diet' must be controlled.

Acknowledgement

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Appendix 1

Vegetables Are considered to be:	1 Serving =	Examples
Raw green leafy vegetables	1 cup	*Spinach,* *Salad,* etc...
Other vegetables, cooked or chopped raw	½ cup	*Tomato,* *Carrots,* *Brinjals,* *Beans,* *Bitter gourd, etc...*

Fruits Is considered to be:	1 Serving =	Examples
Apple, Banana, Orange, Mango	1 medium size	
Melon	half (1/2) of medium	
Papaya	¼ of medium size	
Avocado	quarter (1/4) of medium size	
Pineapple	2 slices	
Grapes	1 ½ cup	